



9x15 Low Speed Wind Tunnel

at NASA Glenn Research Center – Cleveland, Ohio

Facility Description: The 9X15 Low Speed Wind Tunnel is the most utilized low-speed propulsion acoustic facility in the world. It is also the only national facility that can simulate take-off, approach and landing in a continuous subsonic flow wind-tunnel environment. This facility specializes in evaluating aerodynamic performance and acoustic characteristics of fans, nozzles, inlets, propellers, and hot gas re-ingestion of advanced Short Take-off Vertical Landing (STOVL) systems.

Facility Benefits:

- Calibrated and documented test section conditions
- Real-time data acquisition and display in both alpha-numeric and graphical format
- Standardized data acquisition systems at all Glenn wind tunnel facilities
- Aerodynamic and Propulsion cycle operating modes
- Model support systems (hydraulics, exhaust, high pressure air, etc.)
- New, unique rotor alone nacelle test capability making it possible to isolate fan alone noise
- 1000, 2200 (counter-rotating), and 5000 hp high speed fan drive rigs, using heated compressed air, can be mounted on two turntable systems
- LDV and flow visualization systems - laser sheet, oil flow, pressure sensitive paint
- Experienced staff of technicians, engineers, researchers, and operators
- Accommodates Government and private industry research programs

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Commercial Applications:

- Engine system noise reduction
- Fan noise prediction codes and measurement methods
- Low speed flight applications for aircraft
- Advanced propulsion system components
- High speed and counter-rotating fans
- Airport noise

Programs/Projects Supported:

- Ultra-Efficient Engine Technology
- Quiet Aircraft Technology
- Versatile Affordable Advanced Turbine Engine
- Joint Strike Fighter
- Advanced Tactical Fighter

Facility Testing Information:

For information on testing please go to:
<http://facilities.grc.nasa.gov>